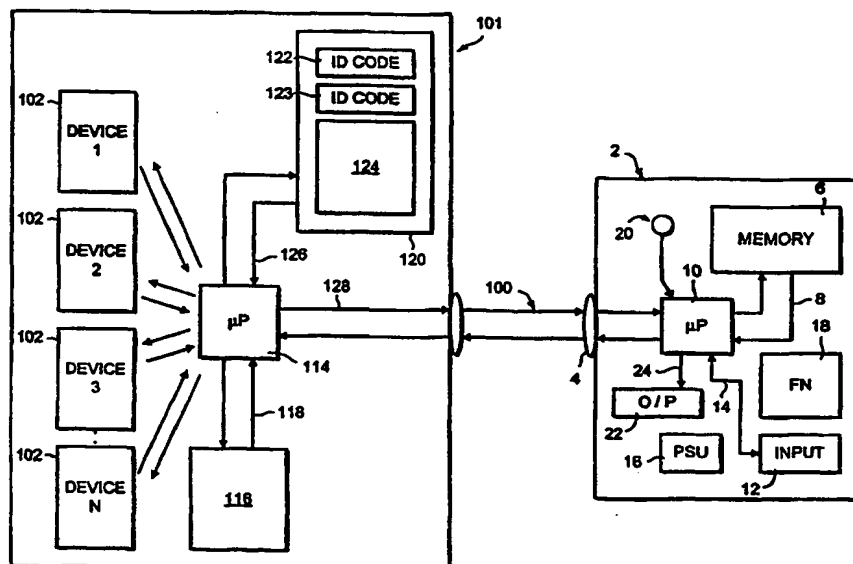




## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification <sup>7</sup> : <b>G05B 19/409</b>	<b>A1</b>	(11) International Publication Number: <b>WO 00/41047</b> (43) International Publication Date: 13 July 2000 (13.07.00)
<p>(21) International Application Number: PCT/IB99/02082</p> <p>(22) International Filing Date: 23 December 1999 (23.12.99)</p> <p>(30) Priority Data: 9828877.2 31 December 1998 (31.12.98) GB</p> <p>(71) Applicant (for all designated States except US): NOKIA MOBILE PHONES [FI/FI]; Keilalahdentie 4, FIN-02150 Espoo (FI).</p> <p>(72) Inventors; and (75) Inventors/Applicants (for US only): RATAMO, Ilkka [FI/DE]; Ohligserstrasse 93a, D-42781 Haan (DE). SUURONEN, Heikki [FI/FI]; Rajamäentie 30, FIN-24130 Salo (FI).</p> <p>(74) Agents: JEFFERY, Kendra et al.; Nokia Ipr Department, Nokia House, Summit Avenue, Farnborough, Hampshire GU14 ONG (GB).</p>		<p>(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).</p> <p><b>Published</b> With international search report.</p>

(54) Title: A PORTABLE CONTROLLER



## (57) Abstract

An arrangement for configuring a device (102) of a system (101) by transferring control information from a removable controller (2) thereto is disclosed. The controller (2) comprises input means (12) for receiving control information for configuring the device (102), memory circuitry (6) arranged to store and retrieve control information for configuring the device (102), and output means for transferring to the system (101) retrieved control information for the device (102). The system (101) comprises means (128) for coupling with the output means of the removable controller (2) to transfer retrieved control information therefrom, and control means (114) arranged to configure the device (102) in dependence upon the transferred control information.

**FOR THE PURPOSES OF INFORMATION ONLY**

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	ES	Spain	LS	Lesotho	SI	Slovenia
AM	Armenia	FI	Finland	LT	Lithuania	SK	Slovakia
AT	Austria	FR	France	LU	Luxembourg	SN	Senegal
AU	Australia	GA	Gabon	LV	Latvia	SZ	Swaziland
AZ	Azerbaijan	GB	United Kingdom	MC	Monaco	TD	Chad
BA	Bosnia and Herzegovina	GE	Georgia	MD	Republic of Moldova	TG	Togo
BB	Barbados	GH	Ghana	MG	Madagascar	TJ	Tajikistan
BE	Belgium	GN	Guinea	MK	The former Yugoslav Republic of Macedonia	TM	Turkmenistan
BF	Burkina Faso	GR	Greece	ML	Mali	TR	Turkey
BG	Bulgaria	HU	Hungary	MN	Mongolia	TT	Trinidad and Tobago
BJ	Benin	IE	Ireland	MR	Mauritania	UA	Ukraine
BR	Brazil	IL	Israel	MW	Malawi	UG	Uganda
BY	Belarus	IS	Iceland	MX	Mexico	US	United States of America
CA	Canada	IT	Italy	NE	Niger	UZ	Uzbekistan
CF	Central African Republic	JP	Japan	NL	Netherlands	VN	Viet Nam
CG	Congo	KE	Kenya	NO	Norway	YU	Yugoslavia
CH	Switzerland	KG	Kyrgyzstan	NZ	New Zealand	ZW	Zimbabwe
CI	Côte d'Ivoire	KP	Democratic People's Republic of Korea	PL	Poland		
CM	Cameroon	KR	Republic of Korea	PT	Portugal		
CN	China	KZ	Kazakstan	RO	Romania		
CU	Cuba	LC	Saint Lucia	RU	Russian Federation		
CZ	Czech Republic	LI	Liechtenstein	SD	Sudan		
DE	Germany	LK	Sri Lanka	SE	Sweden		
DK	Denmark	LR	Liberia	SG	Singapore		
EE	Estonia						

### A Portable Controller

5 The present invention relates to the configuration of systems, such as vehicle management systems. In particular, the invention relates to a portable controller for configuring a system comprising one or more devices.

Electronically controlled devices are very common, and are becoming even more so.

10

Currently, the onus lies with the user of both electronically and manually controlled devices to adapt each device as he uses it. For example, when a driver gets into a vehicle, he generally adjusts at least the mirror and seat positions, and often also temperature/ventilation settings.

15

It would be desirable to reduce the burden placed on a user to adapt each device within a system when he employs that system. It would be desirable to adjust the devices of a system automatically when a user wishes to use that system, according to the user's predetermined preferences.

20

According to one aspect of the present invention, there is provided an arrangement for configuring a device of a system by transferring control information from a removable controller thereto, wherein the controller comprises: input means for receiving control information for configuring the device; memory circuitry arranged to store and retrieve control information for configuring the device; and output means for transferring to the system retrieved control information for the device; and wherein the system comprises: means for coupling with the output means of the removable controller to transfer retrieved control information therefrom; and control

25

means arranged to configure the device in dependence upon the transferred control information.

5 The user can carry his controller, so that he can readily alter the configuration of devices of a system as desired.

10 The system may comprise a plurality of devices. In this event, the system may only comprises a single control means arranged to configure the device in dependence upon the control information transferred from the controller, thus eliminating the need for a plurality of different user interfaces. In one embodiment, each device is configured in dependence upon control information transferred by the controller. Advantageously, all the devices are reconfigured in a single step, thus simplifying the operation by the user. Alternatively, if desired, the user can manually select which of the devices are  
15 to be reconfigured.

The memory circuitry may store and retrieve control information corresponding to the controller user's personal preferences. In this manner, the user can carry his preferences between different systems, thus improving  
20 the ease with which systems can be configured for him.

Optionally, the memory circuitry may store and retrieve information identifying a particular system so that the control information only configures the device or devices of that particular system. This enables the controller to be used to  
25 provide system security. For example, in a preferred embodiment, the system is a vehicle control system, and comprises devices such as an alarm, an immobiliser, and door/boot locks. Other devices which may be provided as part of a vehicle management system include a temperature/ventilation controller, an engine management device, and servicing interface device.

The removable controller may be removable from the environment of the system, and may automatically reconfigure system devices when it enters the environment of the system. Optionally, the removable controller is a handportable radio device.

5

According to another aspect of the present invention, there is provided a controller removable from a system for storing control information for a system and for configuring the device of a system by transferring control information to the system, comprising: input means for receiving control information for  
10 configuring the device; memory circuitry arranged to store control information for configuring the device and to retrieve control information associated with a device; and output means for transferring to the system, retrieved control information associated with the device. It may also have the optional features mentioned above.

15

Embodiments of the present invention will now be described, by way of example, with reference to the accompanying drawings, of which:

Figure 1 schematically illustrates the components one type of device in the prior art;

20 Figure 2 schematically illustrates the components of a system and a controller, according to one embodiment of the present invention;

Figure 3 illustrates a scheme for organising the storage of control information in the memory of the portable controller;

Figure 4 illustrates a vehicle control system and various portable controllers;

25 Figure 5 illustrates a low power RF (LPRF) interface unit for the system and portable controller; and

Figure 6 illustrates a portable controller in the form of a handportable phone according to an embodiment of the present invention.

30 In the following like references refer to like elements.

Figure 1 illustrates a vehicle management system 101 according to the prior art. The system comprises a plurality of devices 102, each having an associated user interface 106, together with a processor 114 and a memory 116. Generally, the user interfaces have an input interface for receiving input to the device 102 and/or an output interface for producing an output from the device. The processor is in communication with the interface 106 through an interconnect 112 and with the memory 116 through an interconnect 118. The memory 116 stores software which controls the interface 106 through the processor 114. The functionality of the device 102 and the interface 106 is controlled by the software. One device 102 may be any device which requires user interaction i.e. that requires an input from a user or provides an output to a user. A device may for example be a climate controller for controlling a vehicle heating/ventilation system. Such a controller may comprise a temperature controller for setting the temperature of the air passing through the interior of the vehicle, a fan controller for setting the fan speed to provide the desired air flow, and mode controller for controlling the direction of air flow. The output interface 110 may include vents at various positions within the vehicle, such as at the centre and edges of the dash, bottom of the windscreen and near the floor. Another device 102 may be a car audio system. In this case, the input interface may comprise a controller for selecting the radio channel, volume, tone, balance and for turning the device on and off. The output may include a pair of loudspeakers.

Figure 2 illustrates an adapted vehicle management system 101 and a portable controller 2 in accordance with one embodiment of the present invention. The adapted device is similar to the device 102 illustrated in Figure 1 but has an additional memory 120 and a port 104. The port 104 is connected via interconnect 128 to the processor 114. The processor receives control information 100 from the portable controller 2 and supplies control

information 100 to the portable controller 2 via the port 104 and interconnect 128. The additional memory 120 which may in practice be a portion of the memory 116 is attached to the processor 114 through interconnect 126. The additional memory 120 has a first portion 122 which stores an ID code which identifies the system 101, a second portion 123 which stores an ID code which identifies the device 102, and a third portion 124 which stores software. This software controls how the processor responds to control information received from the portable controller 2 and controls the control information provided by the processor 114 to the portable controller 2.

10

The portable controller 2 according to this embodiment has a processor 10, a memory 6 for storing control information, a switching element 20 for controlling the transfer of control information between the portable controller 2 and the device 102, a port 4 for supplying control information to and receiving control from the device 102, an output 22 for giving information to a user, an input 12 for receiving an input from a user, functional circuitry 18 and a power supply unit 16. The processor receives an input from the switching element, writes to and reads from the memory 6 via an interconnect 8, controls the input 12 and receives signals therefrom via interconnect 14 and controls the output 22 by signal 24. The functional circuitry 18 represents the circuitry necessary for the portable controller 2 to be able to perform other functions ancillary to the present invention. For example, the functional circuitry 18 may allow the portable device to be additionally used as a mobile phone or car phone handset. The power supply device 16 is a battery cell which supplies power to the other elements in the portable controller 2. The memory 6 is preferably some form of non-volatile memory which can be written to and read from. Electrically erasable programmable read-only memory (EEPROM or 'flash memory') is suitable.

The communication of control information between the device 102 and the portable controller 2 may be achieved by any suitable means. An electrical connection could be made between the port 104 and port 4. Alternatively, the ports could be radio transceivers with the control information being transmitted as radio waves between them. Such transmission would preferably be point to point. Annex 1 is a copy of UK Patent Application No 9820860.6 filed 24<sup>th</sup> September 1998, which describes a low power radio frequency communication scheme that could be used to effect communication between the controller 2 and a device 102 and the contents of this application are herewith included by reference. Another alternative would be to use Infra-Red (IR) transceivers as the ports 104 and 4 with the control information being transmitted as IR radiation between them.

Activation of the switching element 20 to a first position causes the processor 10 to enter a 'receiving mode' and activation of the element 20 to a second position causes the processor to enter a 'transmitting mode'. In the 'receiving mode' the processor 10 receives control information 100 from the device 102 and stores the control information in the memory 6. Typically the device will have been configured by a user to reflect their preferences before entering the receiving mode and the control information transferred identifies these preferences. In the 'transmitting mode' the processor sends the control information from the memory 6 of the portable controller 2 to the system 101. The control information identifies the user's preferences and the system 101 automatically re-configures its associated devices 102 to reflect these preferences.

On entering the receiving mode the processor 10 sends a request to the system 101 for control information 100. This request is sent from port 4 to port 104. The processor 114 in the system 101 receives the request and enters a 'set-up' mode. The processor under the control of the software in the memory



6 identifies the settings of the devices 102 which are user alterable and then identifies which of those settings differ from the default or factory pre-set settings i.e. those settings which have been altered by the user. These settings represent a set of altered or preferred settings. The processor under  
5 the control of the software may allow the user to identify preferences such as settings, software, applications or data which they wish to be available when the same or similar device is configured by the portable controller. These preferences represent a set of chosen settings. The control information 100 comprises information defining the user's preferences including the preferred  
10 settings and any chosen settings.

The user's preferences include the information for configuring the functionality or operation of one or more devices of the system.

15 The control information is transmitted with the ID code of the system and device(s). The ID codes identify the system and associated device(s) as a particular type. For example the first  $n$  significant bits (System ID) of the system ID code may identify the type of system e.g. vehicle management system. The next few significant bits (Model ID) may identify the manufacturer  
20 and model of vehicle, and the following bits may indicate the actual vehicle. Likewise, the first  $n$  significant bits (Device ID) may identify the type of device, (e.g. climate controller, car audio system, seat positioner, immobiliser etc), and the next few significant bits (Model ID) may identify the model employed. The control information and ID codes are sent from the device 102 to the  
25 portable controller 2. The processor 10 of the portable controller 2 identifies the ID codes and stores the control information in the memory 6. One way of storing the control information will now be described with reference to Figure 3. The processor reserves a portion of the memory 6 as a look-up table. In this embodiment a portion  $\alpha$  has been reserved for a given system code 122.  
30 Similar portions would be provided for different systems. The processor

translates the device ID code 123 into a starting address *a* in the memory 6 to which the control information including the preferred and any chosen settings will be written. The control information is written into the memory in an ordered fashion with the last bit occupying an address *b*. An entry is made in the look-up table comprising the device ID code 123, the starting address *a*, and the end address *b*. The control information is stored in two logical layers. The upper layer identifies the preference types *A*, *B*, *C* ... and gives a pointer to the portion of the lower layer which stores the actual settings, applications, software or data which effect the preferences on a device 102. On successfully storing the control information, the processor returns an acknowledgement to the system 101 and provides a signal to the user via the output 22. A failure in the transfer process may also be indicated via the output 22.

It is preferable for the processor 114 in the system 101 to flag those preferences, which are common to devices of different systems with the same Device ID of the device ID code 123, in the control information before transmission to the portable controller 2. In this instance the processor will create two separate entries in the look-up table. One entry under the full ID code which identifies the memory area storing all the preferences and one entry under the Device ID which identifies the memory area storing only the flagged preferences. As the flagged preferences are a subset of the preferences it is not necessary to store the flagged preferences twice. Instead the two upper layers associated with the two different look-up table entries can point to the same part of the memory storing the flagged preferred settings.

Referring to Figure 3 the portions of the memory c-d, e-f, g-h each represent the portion of memory which stores the control information for different devices. The portion i-j is available memory.

On entering the 'transmitting mode' the portable controller 2 sends a transmission request to the system 101. In this embodiment, the processor 114 of the system 101 responds by reading the system ID code 123 and an ID code 123 corresponding to one of the devices 102 from memory 120 and transmitting it via port 104 to the portable controller 2. It also loads and executes the software for that device 102 in the portion 124 of memory 120. The processor 10 in the portable controller decodes the received ID codes 122, 123 identifying the system 101 and one of its associated devices 102. It then accesses the portion of the memory 6 storing the control information associated with that device identity and transmits the control information to the system 101 via port 4. The particular method of accessing the control information will be described with reference to Figure 3. The processor 10 accesses the memory 6 and searches for the portion reserved,  $\alpha$ , for the identified system, and reads the corresponding look-up table from the memory. The processor searches the look-up table for an entry having the same device ID code as the device ID code 123 received from the device 102. If an entry is found, the control information in the memory portion identified in the look-up table is read and transmitted to the device 102. If an entry is not found, the processor searches the look-up table for an entry having the same Device ID as that found in the first portion of the device ID code received from the system 101. If the second entry is found, the control information in the memory portion identified in the look-up table is read and transmitted to the system 101. If the second entry is not found, a null signal is sent to the system 101 instructing it to use the present settings or, alternatively, the default settings of the device and the user is informed via output 22.

The processor 114 under the control of the software in the memory 120 receives the control information or null signal from the portable device 2. It identifies what if any preferences need to be implemented. This may require

identifying which settings need to be adjusted and determining how much they should be adjusted by. The processor 114 then controls the adjustment. It may also require storing any software, application or data received as a preference in memory 116 and allowing access thereto. On completion of  
5 implementing the preferences, the processor sends a signal back to the portable controller 2 indicating that the adjustment has been successfully completed. The portable controller 2 informs the user via the output 22.

Thus the device 102 is configured and any of the appearance, format, or  
10 functionality of any of the devices 102 are changed.

The transmission request need not be one corresponding to a particular device associated with a system. Instead, it may only request the system ID 122, in which case control information for all the associated devices 102 is  
15 transferred. Alternatively, it may only be a request for a device ID 123.

In the foregoing description of the receiving mode, the control information was described as being received from a device 102. However, as an alternative the preferred settings could be input directly into the portable controller via the  
20 input 12. Alternatively, a computer or other device could provide the control information to the port 4.

In the foregoing embodiment, the switching element is described as part of the portable controller 2. It could however be part of the device 102 instead.  
25

It is desirable but not essential to have the output 22 to keep the user informed of progress. The input 12 is optional. The PSU 16 is optional as power could be supplied from the system 101 via port 4. The functional circuitry 18 is optional.  
30

For some applications it would be desirable for the device to be aware of when a user no longer requires it to be configured to his or her preferences for example when the user leaves the device. The device is able to check whether the portable controller is within a specified range of the device. This range could vary from device to device. When the user and portable device move outside the range the device could automatically reconfigure to the default settings or switch off . Alternatively the user could be provided with the option of manually informing the device so that it can reconfigure or switch off.

Figure 4 illustrates the implementation of a vehicle control system according to an embodiment of the present invention. The system comprises a vehicle control system comprising an interface module 401 for interfacing with a portable controller, and a vehicle management system block 402. The interface module 401 is a low power RF module in this embodiment, but may alternatively be a mechanical connector. The vehicle management system block 402 comprises a plurality of devices which may be adjusted according to the portable controller user's preferences, and a vehicle bus 420 which may, for example, electrically or optically connect these devices to the interface module 401. The devices include a climate controller 421, car audio system 422 and seat positioner 423. They also include security control features such as an immobiliser 424, door locking controller 425 and alarm system 426. Finally, this vehicle management system block 402 comprises an engine controller 427 and man machine interface 428 for providing information and diagnostics for vehicle servicing.

The portable controller is implemented in a radiotelephone. In one embodiment a car phone has been modified so that a wireless handset 403 provides the functionality of the controller and a handset holder provides the LPRF interface 401 between the wireless handset and vehicle management system 402.

In another embodiment a handportable radiotelephone 404, such as a conventional GSM phone is provided with an LPRF interface for coupling to the interface module 401. Such a phone is described below with reference to  
5 Figure 6. The LPRF interface may be part of a car phone or a dedicated interface for connection to the vehicle bus 420.

The mobile phone may act as a security device. For example the handportable 404 may ensure that entry or operation of the vehicle or alarm  
10 disablement is only possible if the legitimate user enters the LPRF range of the unit 401 with the controller having an entry in its memory corresponding to the exact system ID of the vehicle. In this event, control information is forwarded to the devices 424-426 via the LPRF link and vehicle bus 420 to unlock the doors/boot or disable the immobiliser or alarm. Otherwise, for  
15 example, the immobiliser is enabled, doors and/or boot are locked and alarm is enabled.

Alternatively, if the vehicle comprises a car phone and the control is provided by a handportable, the IDs of the phones may be compared. If they match,  
20 the appropriate control information is transferred from the controller memory to the vehicle devices.

Turning now to Figures 5 and 6, these illustrate the LPRF interface module 401 and mobile phone 404 respectively in more detail.

25

The LPRF interface module 401 comprises a process 51, program memory 52, customer data memory 56, RF parts 54, optional internal power source 53 and an interface to host systems (such as vehicle devices including the battery for power). The functions of the processor 51, and program memory  
30 52 broadly correspond to those of the processor 114 and 116 of the Figure 2

embodiment and the interface couples the processor to devices such as those referenced 102 in that embodiment. The device preferably comprises the internal power source 53, so as to prevent drain on the vehicle's battery when the ignition is off. The RF parts 54 comprises a transceiver for communicating with a portable controller by radio. The customer data memory 56 is also preferably provided, to update the memory of an associated mobile phone (e.g. updating the phonebook of the handportable phone 404 when coupled to the RF unit 401).

- 10 The handportable phone 404 may be provided with a battery 601 comprising an LPRF battery unit 601, as shown in Figure 6. In this embodiment, battery contacts of the phone 604 comprise an EC1 bus for connection to the LPRF battery unit 601 of the battery 603 and communication between the portable controller (phone 604) and the vehicle devices is effected by the EC1 bus
- 15 602, LPRF link between the LPRF battery unit and interface unit 401, and the vehicle bus 420.

The present invention includes any novel feature or combination of features disclosed herein either explicitly or any generalisation thereof irrespective of whether or not it relates to the claimed invention or mitigates any or all of the problems addressed.

In view of the foregoing description it will be evident to a person skilled in the art that various modifications may be made within the scope of the invention.

## Claims

1. An arrangement for configuring a device of a system by transferring control  
5 information from a removable controller thereto, wherein the controller comprises:

input means for receiving control information for configuring the device ;

10 memory circuitry arranged to store and retrieve control information for configuring the device; and

output means for transferring to the system retrieved control information for the device; and

15 wherein the system comprises:

means for coupling with the output means of the removable controller to transfer retrieved control information therefrom; and

20 control means arranged to configure the device in dependence upon the transferred control information.

2. An arrangement as claimed in claim 1, wherein the system comprises a  
25 plurality of devices and the control means is arranged to configure the devices in dependence upon transferred control information.

3. An arrangement as claimed in claim 2, wherein the controller output means transfers to the system retrieved control information for the devices of



the system, and the control means configures the devices in dependence upon the transferred control information.

4. An arrangement as claimed in claim 2, wherein the controller output means transfers to the system retrieved control information for a selection of devices of the system defined by the user, and the control means configures the selection of devices in dependence upon the transferred control information.
5. An arrangement as claimed in any preceding claim, wherein the memory circuitry stores and retrieves control information corresponding to the controller user's personal preferences.
6. An arrangement as claimed in any of claims 1 to 4, wherein the memory circuitry stores and retrieves information identifying a particular system and the control information only configures the device or devices of that particular system.
7. An arrangement as claimed in claim 6, wherein the device or devices are security devices.
8. An arrangement as claimed in any preceding claim, wherein the system is a vehicle control system.
9. An arrangement as claimed in claim 8, wherein the device or devices are selected from devices including an alarm, an immobiliser, a seat positioner, a mirror positioner, door/boot locks, temperature/ventilation controller, an engine management device, and servicing interface device.
2. An arrangement as claimed in claim 1, wherein configuring the device changes the manner in which the device functions.

10. An arrangement as claimed in any preceding claim, wherein the removable controller is removable from the environment of the system.

5 11. An arrangement as claimed in claim 10, wherein the removable controller transfers retrieved control information to the system when it enters the environment of the system.

12. An arrangement as claimed in any preceding claim, wherein the  
10 removable controller is a handportable radio device.

13. An arrangement as claimed in any preceding claim wherein the means for coupling comprises an electrical connector or an IR or radio transceiver.

15 14. An arrangement as claimed in any preceding claim wherein the device is electronically controlled by the system.

15. An arrangement as claimed in any preceding claim wherein the system comprises a processor and memory, wherein the memory stores the  
20 transferred control information and the processor controls the operation of the device, reconfiguring it in dependence upon the received control information.

16. An arrangement as claimed in any preceding claim wherein the portable controller is as claimed in any one of claims 17 to 28.

25

17. A controller removable from a system for storing control information for a system and for configuring the device of a system by transferring control information to the system, comprising:

30 input means for receiving control information for configuring the device ;

memory circuitry arranged to store control information for configuring the device and to retrieve control information associated with a device; and

- 5     output means for transferring to the system, retrieved control information associated with the device.

18.     A controller as claimed in claim 17, wherein memory circuitry is arranged to store control information for configuring a plurality of devices of  
10     the system.

19.     A controller as claimed in claim 18, wherein the output means is arranged to transfer to the system retrieved control information for the devices of the system.

15

20.     A controller as claimed in claim 18, wherein the output means transfers to the system retrieved control information for a selection of devices of the system defined by the user.

20     21.     A controller as claimed in any of claims 17 to 20, wherein the memory circuitry stores and retrieves control information corresponding to the user' personal preferences.

22.     A controller as claimed in any of claims 17 to 21, wherein the memory  
25     circuitry stores and retrieves information identifying a particular system and only outputs control information corresponding to the device or devices of that particular system.

23. A controller as claimed in claim 22, wherein the memory circuitry comprises a look-up table for associating the identity of the system and its devices with the respective device control information.

5 24. A controller as claimed in claim 23 wherein the look-up table is arranged to assign portions of memory to each identity

25. A controller as claimed in any of claims 17 to 24, wherein said output means comprises means for establishing a bi-directional link with a system  
10 and for performing a handshaking procedure with the system,

26. A controller as claimed in claim 25, wherein said bi-directional link transfers the identity of a system/device to the controller and transfers control information from the controller to the system.

15

27. A controller as claimed any of claims 17 to 26, wherein said output means comprises an electrical interface or IR interface or radio interface

28. A controller as claimed in any of claims 17 to 27, wherein the power to  
20 operate said controller is provided by the system to which control information is transferred.

29. An arrangement substantially as hereinbefore described with reference to, and/or as illustrated in any one or any combination of Figures 2 to 6.

25

30. A removable controller substantially as hereinbefore described with reference to, and/or as illustrated in any one or any combination of Figures 2 to 6.

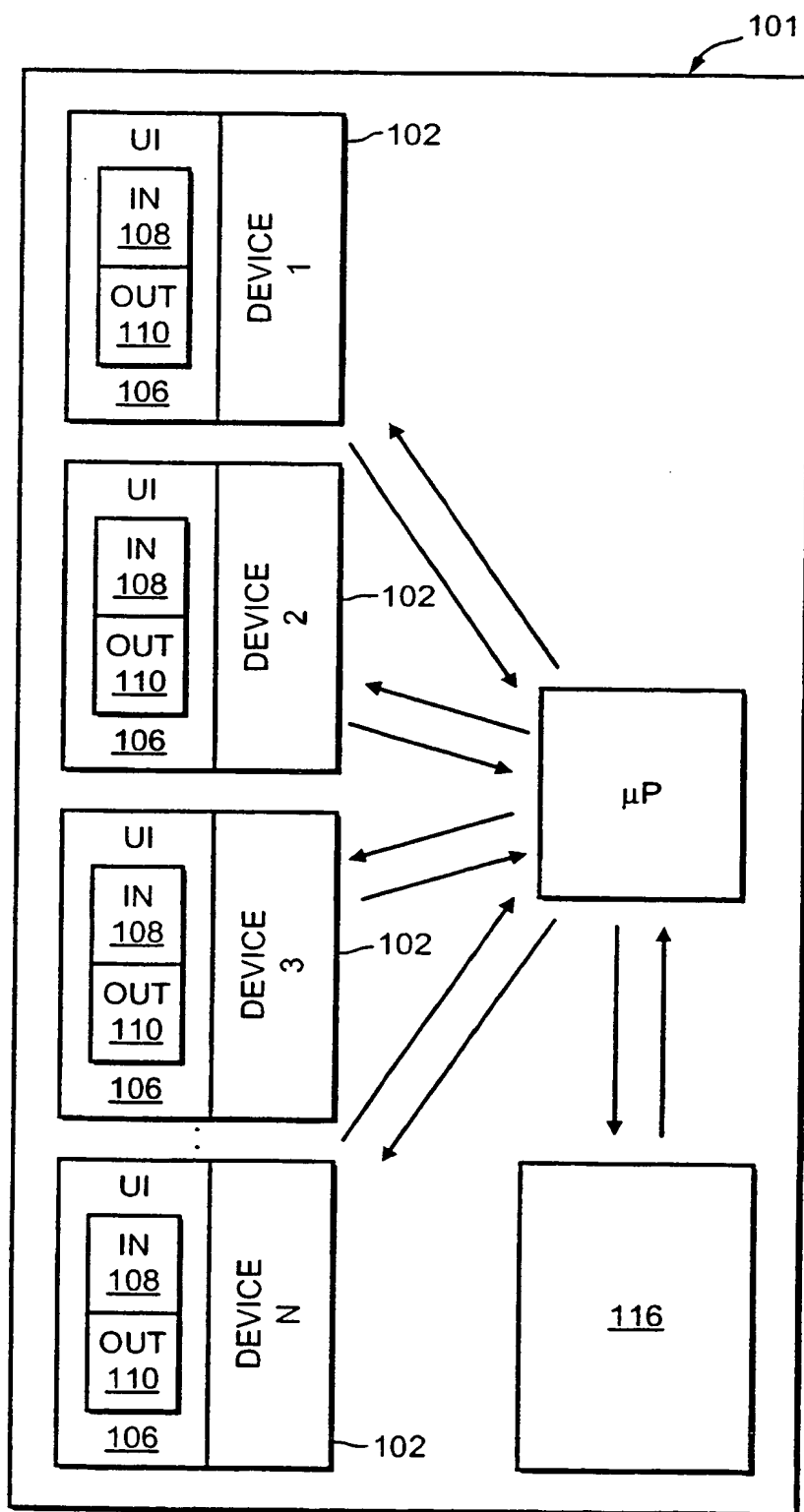
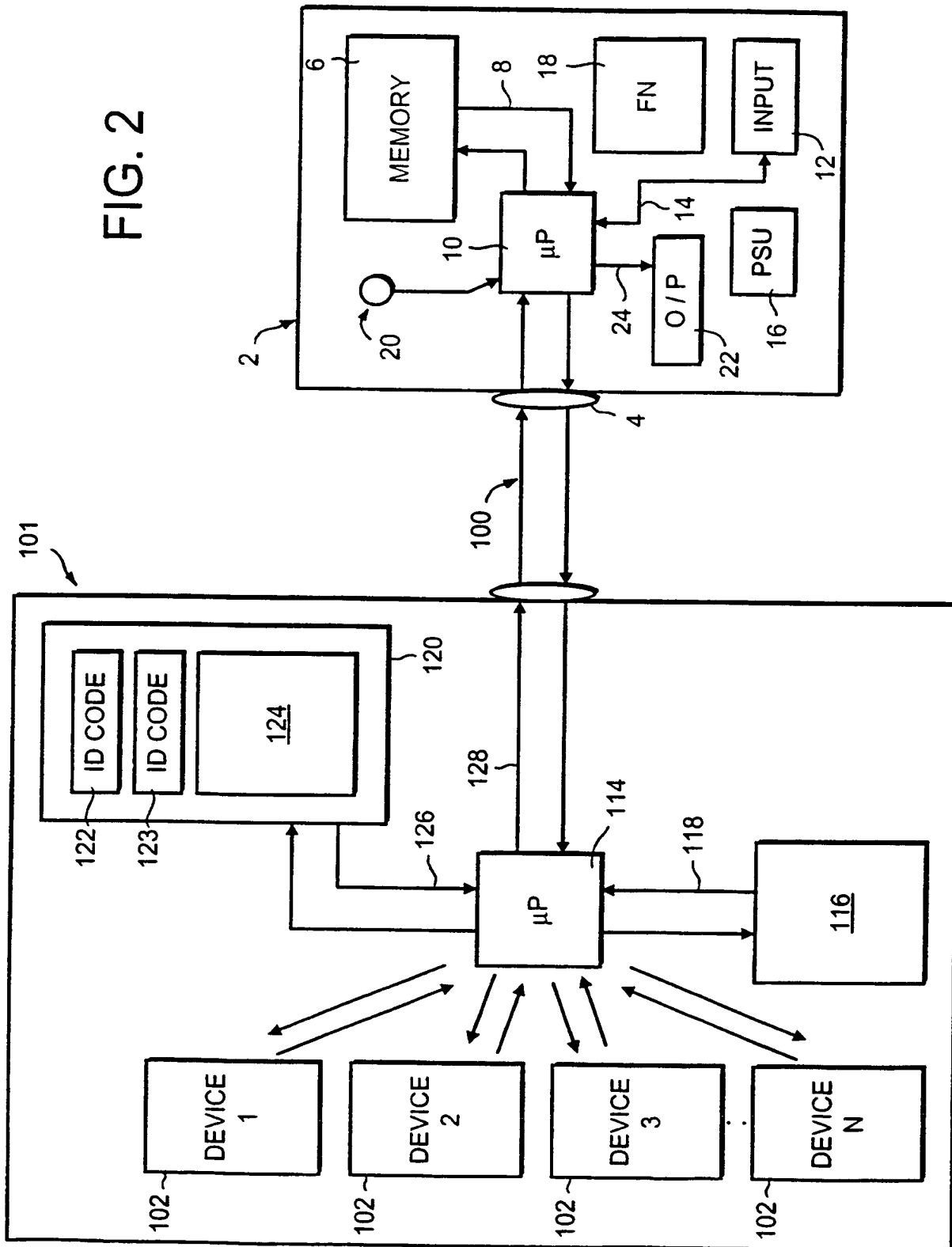


FIG. 1

FIG. 2



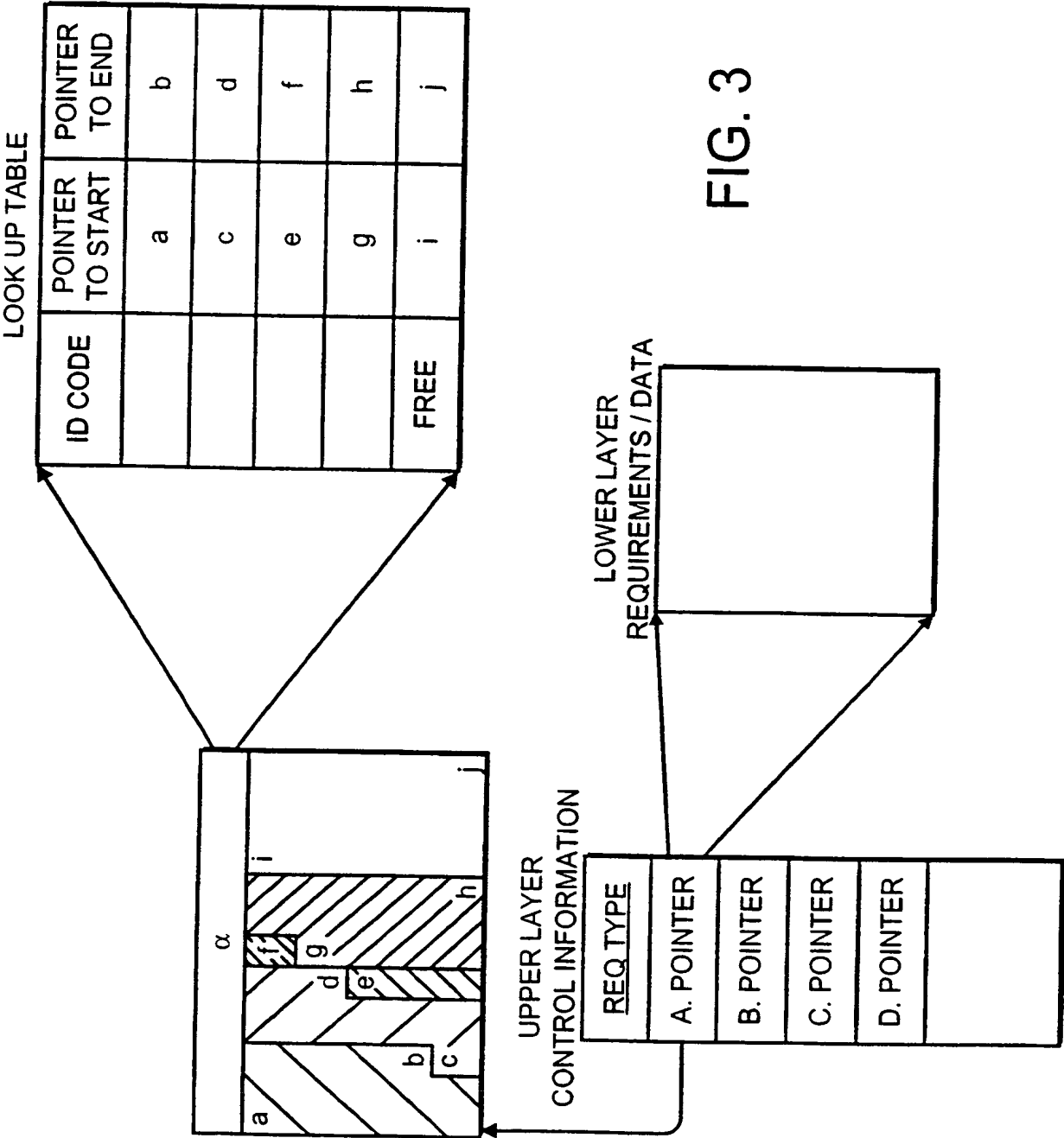


FIG. 3

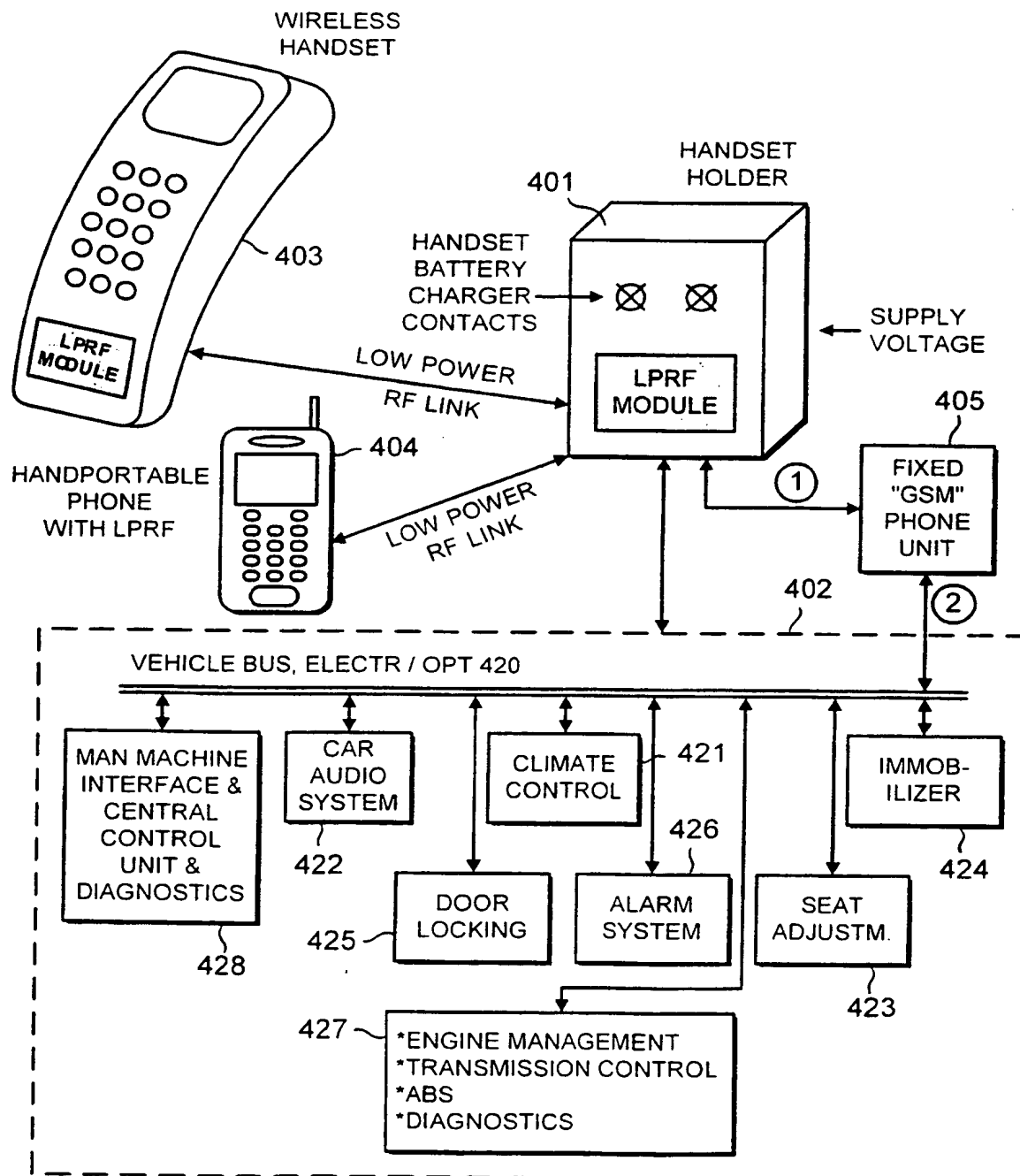
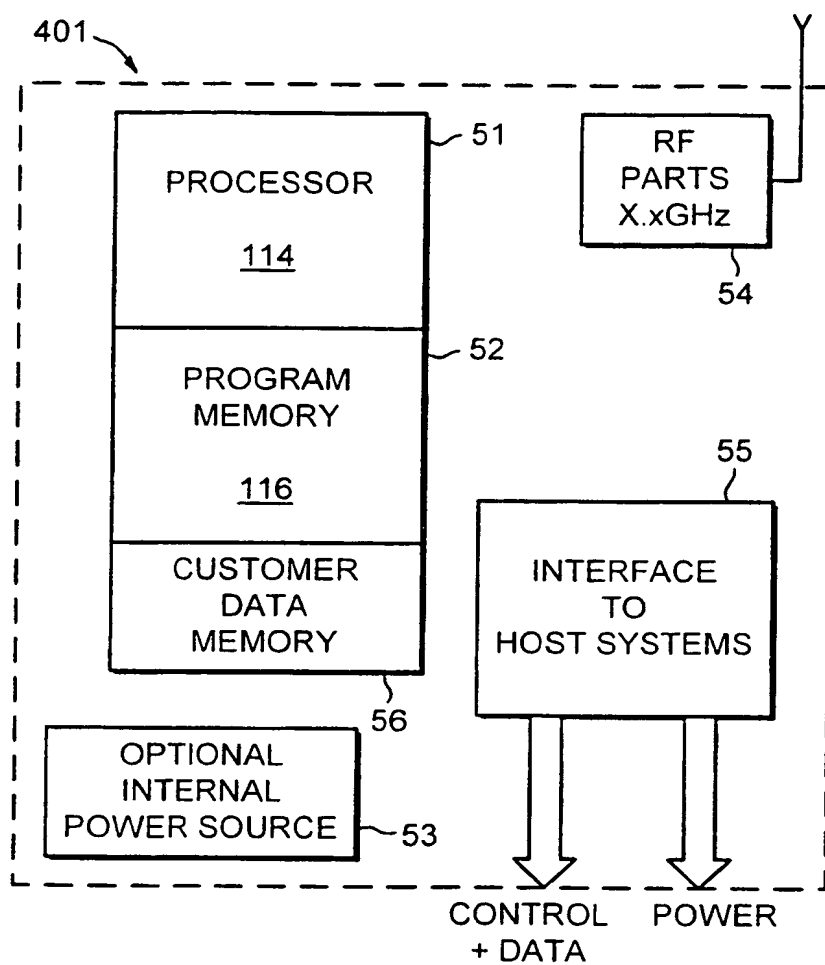


FIG. 4



**FIG. 5**

LOW POWER RF UNIT

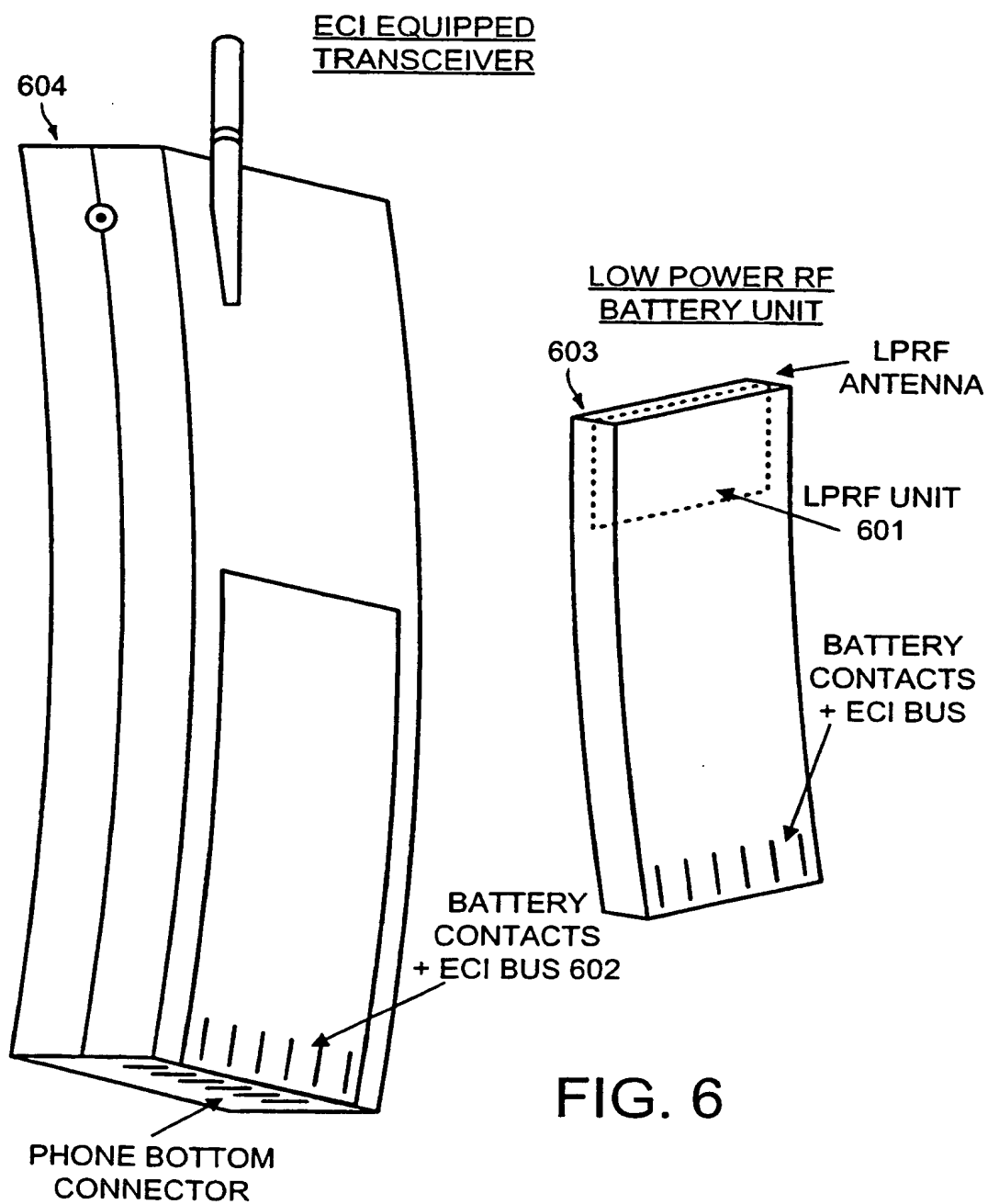


FIG. 6

# PATENT COOPERATION TREATY

# PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference <b>PAT 98425*PC</b>	<b>FOR FURTHER ACTION</b> <small>see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.</small>	
International application No. <b>PCT/IB 99/ 02082</b>	International filing date (day/month/year) <b>23/12/1999</b>	(Earliest) Priority Date (day/month/year) <b>31/12/1998</b>
Applicant  <b>NOKIA MOBILE PHONES et al.</b>		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 3 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

**1. Basis of the report**

a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international search was carried out on the basis of the sequence listing:

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

2. ☐ Certain claims were found unsearchable (See Box I).

3. ☐ Unity of invention is lacking (see Box II).

4. With regard to the title,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the abstract,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the drawings to be published with the abstract is Figure No.

☒ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

2

☐ None of the figures.

## INTERNATIONAL SEARCH REPORT

International Application No.

PCT/IB 99/02082

**A. CLASSIFICATION OF SUBJECT MATTER**  
IPC 7 G05B19/409

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G05B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 791 407 A (HAMMONS TIMOTHY E) 11 August 1998 (1998-08-11) column 2, line 23 -column 6, line 31; figure 1	1-28
X	WO 96 35152 A (ELONEX TECHNOLOGIES INC) 7 November 1996 (1996-11-07) page 5 -page 13; figures 1-6	1-7, 10-28
X	US 5 412 377 A (EVANS BENJAMIN F ET AL) 2 May 1995 (1995-05-02)  column 2, line 66 -column 8, line 11; figures 1,2	1-6, 10-24, 27,28
A	US 4 916 441 A (GOMBRICH PETER P) 10 April 1990 (1990-04-10) abstract	1-28
-/-		

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

## \* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

17 March 2000

Date of mailing of the international search report

27/03/2000

Name and mailing address of the ISA

European Patent Office, P.B. 5618 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
Fax: (+31-70) 340-3018

Authorized officer

Tran-Tien, T

## INTERNATIONAL SEARCH REPORT

International Application No.

PCT/IB 99/02082

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 204 768 A (LAWSON DAVID L ET AL) 20 April 1993 (1993-04-20) abstract	1-28
A	EP 0 392 872 A (MOLEX INC) 17 October 1990 (1990-10-17) abstract	1-28
A	US 5 309 351 A (LUEDERS WILLIAM R ET AL) 3 May 1994 (1994-05-03) abstract	1-28

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/IB 99/02082

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5791407	A	11-08-1998	AU 6173296 A CA 2258839 A WO 9700410 A	15-01-1997 03-01-1997 03-01-1997
WO 9635152	A	07-11-1996	NONE	
US 5412377	A	02-05-1995	NONE	
US 4916441	A	10-04-1990	NONE	
US 5204768	A	20-04-1993	NONE	
EP 0392872	A	17-10-1990	US 5128667 A	07-07-1992
US 5309351	A	03-05-1994	DE 68925271 D DE 68925271 T EP 0369188 A JP 2257731 A	08-02-1996 14-08-1996 23-05-1990 18-10-1990

6/11/16

Pat. Rec'd

ART 34/15

09/869542

18 Rec'd PCT/PTO 2 9 JUN 2001

PAT 98425 PCT

A Portable Controller

5 The present invention relates to the configuration of systems, such as vehicle management systems. In particular, the invention relates to a portable controller for configuring a system comprising one or more devices.

10 Electronically controlled devices are very common, and are becoming even more so.

15 Currently, the onus lies with the user of both electronically and manually controlled devices to adapt each device as he uses it. For example, when a driver gets into a vehicle, he generally adjusts at least the mirror and seat positions, and often also temperature/ventilation settings.

20 It would be desirable to reduce the burden placed on a user to adapt each device within a system when he employs that system. It would be desirable to adjust the devices of a system automatically when a user wishes to use that system, according to the user's predetermined preferences.

25 According to one aspect of the present invention, there is provided an arrangement for configuring a device of a system by transferring control information from a controller thereto, wherein the controller comprises: input means for receiving control information for configuring the device ; memory circuitry arranged to store and retrieve control information for configuring the device; and output means for transferring to the system retrieved control information for the device; and wherein the system comprises: means for coupling with the output means of the controller to transfer retrieved control information to the system; and control.

30

## Claims

1. An arrangement for configuring a device of a system by transferring control information from a controller thereto, wherein the controller comprises:

5

input means for receiving control information for configuring the device ;

memory circuitry arranged to store and retrieve control information for configuring the device; and

10

output means for transferring to the system retrieved control information for the device; and

wherein the system comprises:

15

means for coupling with the output means of the controller to transfer retrieved control information to the system; and

control means arranged to configure the device in dependence upon the transferred control information.

20

2. An arrangement as claimed in claim 1, wherein the system comprises a plurality of devices and the control means is arranged to configure the devices in dependence upon transferred control information.

25

3. An arrangement as claimed in claim 2, wherein the controller output means transfers to the system retrieved control information for the devices of the system, and the control means configures the devices in dependence upon the transferred control information.

30

4. An arrangement as claimed in claim 2, wherein the controller output means transfers to the system retrieved control information for a selection of



devices of the system defined by the user, and the control means configures the selection of devices in dependence upon the transferred control information.

- 5 5. An arrangement as claimed in any preceding claim, wherein the memory circuitry stores and retrieves control information corresponding to the user's personal preferences.
- 10 6. An arrangement as claimed in any of claims 1 to 4, wherein the memory circuitry stores and retrieves information identifying a particular system and the control information only configures the device or devices of that particular system.
- 15 7. An arrangement as claimed in claim 6, wherein the device or devices are security devices.
8. An arrangement as claimed in any preceding claim, wherein the system is a vehicle control system.
- 20 9. An arrangement as claimed in claim 8, wherein the device or devices are selected from devices including an alarm, an immobiliser, a seat positioner, a mirror positioner, door/boot locks, temperature/ventilation controller, an engine management device, and servicing interface device.
- 25 10. An arrangement as claimed in any preceding claim, wherein the controller is removable from the environment of the system.
- 30 11. An arrangement as claimed in claim 10, wherein the controller transfers retrieved control information to the system when it enters the environment of the system.

12. An arrangement as claimed in any preceding claim, wherein the controller is a handportable radio device.

13. An arrangement as claimed in any preceding claim wherein the means  
5 for coupling comprises an electrical connector or an IR or radio transceiver.

14. An arrangement as claimed in any preceding claim wherein the device is electronically controlled by the system.

10 15. An arrangement as claimed in any preceding claim wherein the system comprises a processor and memory, wherein the memory stores the transferred control information and the processor controls the operation of the device, reconfiguring it in dependence upon the received control information.

15 16. An arrangement as claimed in any preceding claim wherein the controller is as claimed in any one of claims 17 to 28.

17. A controller for storing control information for a system having a device and for configuring the device of the system by transferring control information  
20 to the system, comprising:

input means for receiving control information for configuring the device ;

memory circuitry arranged to store control information for configuring the  
25 device and to retrieve control information associated with the device; and

output means for transferring to the system, retrieved control information associated with the device.

18. A controller as claimed in claim 17, wherein memory circuitry is arranged to store control information for configuring a plurality of devices of the system.
- 5 19. A controller as claimed in claim 18, wherein the output means is arranged to transfer to the system retrieved control information for the devices of the system.
20. A controller as claimed in claim 18, wherein the output means transfers  
10 to the system retrieved control information for a selection of devices of the system defined by the user.
21. A controller as claimed in any of claims 17 to 20, wherein the memory circuitry stores and retrieves control information corresponding to the user's  
15 personal preferences.
22. A controller as claimed in any of claims 17 to 21, wherein the memory circuitry stores and retrieves information identifying a particular system and only outputs control information corresponding to the device or devices of that  
20 particular system.
23. A controller as claimed in claim 22, wherein the memory circuitry comprises a look-up table for associating the identity of the system and its devices with the respective device control information.
- 25 24. A controller as claimed in claim 23 wherein the look-up table is arranged to assign portions of memory to each identity
25. A controller as claimed in any of claims 17 to 24, wherein said output  
30 means comprises means for establishing a bi-directional link with the system and for performing a handshaking procedure with the system,

26. A controller as claimed in claim 25, wherein said bi-directional link transfers the identity of a system/device to the controller and transfers control information from the controller to the system.
- 5 27. A controller as claimed any of claims 17 to 26, wherein said output means comprises an electrical interface or IR interface or radio interface
28. A controller as claimed in any of claims 17 to 27, wherein the power to operate said controller is provided by the system to which control information  
10 is transferred.
29. An arrangement as claimed in claim 1, wherein configuring the device changes the manner in which the device function.

## PATENT COOPERATION TREATY

PCT

From the INTERNATIONAL BUREAU

To:

JEFFERY, Kendra  
Nokia Ipr Department  
Nokia House  
Summit Avenue  
Farnborough  
Hampshire GU14 ONG  
ROYAUME-UNI

NOTIFICATION OF THE RECORDING  
OF A CHANGE

(PCT Rule 92bis.1 and  
Administrative Instructions, Section 422)

Date of mailing (day/month/year) 23 July 2001 (23.07.01)	IMPORTANT NOTIFICATION
Applicant's or agent's file reference PAT 98425*PC	
International application No. PCT/IB99/02082	International filing date (day/month/year) 23 December 1999 (23.12.99)

## 1. The following indications appeared on record concerning:

☒ the applicant ☐ the inventor ☐ the agent ☐ the common representative

## Name and Address

NOKIA MOBILE PHONES  
Keilalahdentie 4  
FIN-02150 Espoo  
Finland

## State of Nationality

FI

## State of Residence

FI

## Telephone No.

+358 24 3061

## Facsimile No.

+358 24 3064 544

## Teleprinter No.

## 2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning:

☐ the person ☒ the name ☐ the address ☐ the nationality ☐ the residence

## Name and Address

NOKIA MOBILE PHONES LIMITED  
Keilalahdentie 4  
FIN-02150 Espoo  
Finland

## State of Nationality

FI

## State of Residence

FI

## Telephone No.

+358 24 3061

## Facsimile No.

+358 24 3064 544

## Teleprinter No.

## 3. Further observations, if necessary:

## 4. A copy of this notification has been sent to:

☒ the receiving Office ☐ the designated Offices concerned  
☐ the International Searching Authority ☒ the elected Offices concerned  
☒ the International Preliminary Examining Authority ☐ other:

The International Bureau of WIPO  
34, chemin des Colombettes  
1211 Geneva 20, Switzerland

Facsimile No.: (41-22) 740.14.35

## Authorized officer

Maria Victoria CORTIELLO

Telephone No.: (41-22) 338.83.38

## PATENT COOPERATION T TATY

PCT

## NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Assistant Commissioner for Patents  
United States Patent and Trademark  
Office  
Box PCT  
Washington, D.C.20231  
ETATS-UNIS D'AMERIQUE

in its capacity as elected Office

<b>Date of mailing (day/month/year)</b> 14 August 2000 (14.08.00)	<b>Applicant's or agent's file reference</b> PAT 98425*PC
<b>International application No.</b> PCT/IB99/02082	<b>Priority date (day/month/year)</b> 31 December 1998 (31.12.98)
<b>International filing date (day/month/year)</b> 23 December 1999 (23.12.99)	
<b>Applicant</b> RATAMO, Ilkka et al	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:

14 July 2000 (14.07.00)

☐ in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was  
☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

<p>The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland</p> <p>Facsimile No.: (41-22) 740.14.35</p>	<p>Authorized officer Zakaria EL KHODARY</p> <p>Telephone No.: (41-22) 338.83.38</p>
--	--

**PCT REQUEST**

PAT 98425\*PC

Original (for SUBMISSION) - printed on 23.12.1999 12:07:55 PM

<b>0</b>	<b>For receiving Office use only</b>	
<b>0-1</b>	International Application No.	
<b>0-2</b>	International Filing Date	
<b>0-3</b>	Name of receiving Office and "PCT International Application"	
<b>0-4</b>	<b>Form - PCT/RO/101 PCT Request</b>	
<b>0-4-1</b>	Prepared using	<b>PCT-EASY Version 2.90 (updated 15.10.1999)</b>
<b>0-5</b>	<b>Petition</b> The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty	
<b>0-6</b>	<b>Receiving Office (specified by the applicant)</b>	<b>International Bureau of the World Intellectual Property Organization (RO/IB)</b>
<b>0-7</b>	<b>Applicant's or agent's file reference</b>	<b>PAT 98425*PC</b>
<b>I</b>	<b>Title of invention</b>	<b>A PORTABLE CONTROLLER</b>
<b>II</b>	<b>Applicant</b>	
<b>II-1</b>	This person is:	<b>applicant only</b>
<b>II-2</b>	Applicant for	<b>all designated States except US</b>
<b>II-4</b>	Name	<b>NOKIA MOBILE PHONES</b>
<b>II-5</b>	Address:	<b>KEILALAHDENTIE 4 FIN-02150 ESPOO Finland</b>
<b>II-6</b>	State of nationality	<b>FI</b>
<b>II-7</b>	State of residence	<b>FI</b>
<b>II-8</b>	Telephone No.	<b>+358 24 3061</b>
<b>II-9</b>	Facsimile No.	<b>+358 24 3064 544</b>
<b>III-1</b>	<b>Applicant and/or inventor</b>	
<b>III-1-1</b>	This person is:	<b>applicant and inventor</b>
<b>III-1-2</b>	Applicant for	<b>US only</b>
<b>III-1-4</b>	Name (LAST, First)	<b>RATAMO, Ilkka</b>
<b>III-1-5</b>	Address:	<b>Ohligserstrasse 93a D-D-42781 Haan Germany</b>
<b>III-1-6</b>	State of nationality	<b>FI</b>
<b>III-1-7</b>	State of residence	<b>DE</b>

## PCT REQUEST

PAT 98425\*PC

Original (for SUBMISSION) - printed on 23.12.1999 12:07:55 PM

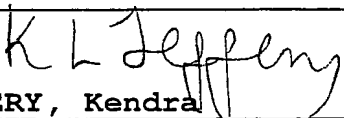
III-2	Applicant and/or inventor	applicant and inventor
III-2-1	This person is:	US only
III-2-2	Applicant for	SUURONEN, Heikki
III-2-4	Name (LAST, First)	Rajamäentie 30
III-2-5	Address:	FIN-24130 SALO
		Finland
III-2-6	State of nationality	FI
III-2-7	State of residence	FI
IV-1	Agent or common representative; or address for correspondence The person identified below is hereby/has been appointed to act on behalf of the applicant(s) before the competent International Authorities as:	agent
IV-1-1	Name (LAST, First)	JEFFERY, Kendra
IV-1-2	Address:	NOKIA IPR DEPARTMENT Nokia House Summit Avenue Farnborough, Hampshire GU14 ONG United Kingdom
IV-1-3	Telephone No.	01252 865000
IV-1-4	Facsimile No.	01252 865080
IV-2	Additional agent(s)	additional agent(s) with same address as first named agent
IV-2-1	Name(s)	HIBBERT, Juliet; HAWS, Helen, Louise; HIGGIN, Paul; MUIR, Henry; FRAIN, Timothy
V	Designation of States	
V-1	Regional Patent (other kinds of protection or treatment, if any, are specified between parentheses after the designation(s) concerned)	AP: GH GM KE LS MW SD SL SZ TZ UG ZW and any other State which is a Contracting State of the Harare Protocol and of the PCT EA: AM AZ BY KG KZ MD RU TJ TM and any other State which is a Contracting State of the Eurasian Patent Convention and of the PCT EP: AT BE CH&LI CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE and any other State which is a Contracting State of the European Patent Convention and of the PCT OA: BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG and any other State which is a member State of OAPI and a Contracting State of the PCT



## PCT REQUEST

PAT 98425\*PC

Original (for SUBMISSION) - printed on 23.12.1999 12:07:55 PM

V-2	National Patent (other kinds of protection or treatment, if any, are specified between parentheses after the designation(s) concerned)	AE AL AM AT AU AZ BA BB BG BR BY CA CH&LI CN CR CU CZ DE DK DM EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW	
V-5	Precautionary Designation Statement In addition to the designations made under items V-1, V-2 and V-3, the applicant also makes under Rule 4.9(b) all designations which would be permitted under the PCT except any designation(s) of the State(s) indicated under item V-6 below. The applicant declares that those additional designations are subject to confirmation and that any designation which is not confirmed before the expiration of 15 months from the priority date is to be regarded as withdrawn by the applicant at the expiration of that time limit.		
V-6	Exclusion(s) from precautionary designations	NONE	
VI-1	Priority claim of earlier national application		
VI-1-1	Filing date	31 December 1998 (31.12.1998)	
VI-1-2	Number	9828877.2	
VI-1-3	Country	GB	
VII-1	International Searching Authority Chosen	European Patent Office (EPO) (ISA/EP)	
VIII	Check list	number of sheets	electronic file(s) attached
VIII-1	Request	4	-
VIII-2	Description	13	-
VIII-3	Claims	5	-
VIII-4	Abstract	1	p98425pctabs.txt
VIII-5	Drawings	6	-
VIII-7	TOTAL	29	
	Accompanying items	paper document(s) attached	electronic file(s) attached
VIII-8	Fee calculation sheet	✓	-
VIII-16	PCT-EASY diskette	-	diskette
VIII-18	Figure of the drawings which should accompany the abstract	2	
VIII-19	Language of filing of the international application	English	
IX-1	Signature of applicant or agent		
IX-1-1	Name (LAST, First)	JEFFERY, Kendra	

FOR RECEIVING OFFICE USE ONLY

10-1	Date of actual receipt of the purported international application	
------	---	--

**PCT REQUEST**

PAT 98425\*PC

Original (for **SUBMISSION**) - printed on 23.12.1999 12:07:55 PM


10-2	Drawings:	
10-2-1	Received	
10-2-2	Not received	
10-3	Corrected date of actual receipt due to later but timely received papers or drawings completing the purported international application	
10-4	Date of timely receipt of the required corrections under PCT Article 11(2)	
10-5	International Searching Authority	ISA/EP
10-6	Transmittal of search copy delayed until search fee is paid	

**FOR INTERNATIONAL BUREAU USE ONLY**

11-1	Date of receipt of the record copy by the International Bureau	
------	--	--

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference PAT 98425*PCT	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/IB99/02082	International filing date (day/month/year) 23/12/1999	Priority date (day/month/year) 31/12/1998
International Patent Classification (IPC) or national classification and IPC G05B19/409		
Applicant NOKIA MOBILE PHONES LIMITED et al.		
<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 8 sheets, including this cover sheet.</p> <p><input checked="" type="checkbox"/> This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of 8 sheets.</p>		
<p>3. This report contains indications relating to the following items:</p> <ul style="list-style-type: none"><li>I <input checked="" type="checkbox"/> Basis of the report</li><li>II <input type="checkbox"/> Priority</li><li>III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</li><li>IV <input type="checkbox"/> Lack of unity of invention</li><li>V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</li><li>VI <input type="checkbox"/> Certain documents cited</li><li>VII <input checked="" type="checkbox"/> Certain defects in the international application</li><li>VIII <input checked="" type="checkbox"/> Certain observations on the international application</li></ul>		
Date of submission of the demand  14/07/2000	Date of completion of this report  27.03.01	
Name and mailing address of the international preliminary examining authority:   European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer  Roberts, N  Telephone No. +49 89 2399 2742	



**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/IB99/02082

**I. Basis of the report**

1. This report has been drawn on the basis of *(substitute sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments (Rules 70.16 and 70.17).):*

**Description, pages:**

2-13	as originally filed		
1	as received on	13/11/2000	with letter of 09/11/2000

**Claims, No.:**

1-29	as received on	13/11/2000	with letter of 09/11/2000
------	----------------	------------	---------------------------

**Drawings, sheets:**

3/6-6/6	as originally filed		
1/6,2/6	as received on	13/11/2000	with letter of 09/11/2000

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/IB99/02082

4. The amendments have resulted in the cancellation of:

- ☐ the description,            pages:
- ☐ the claims,                Nos.:
- ☐ the drawings,            sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Statement**

Novelty (N)	Yes:	Claims	1-29
	No:	Claims	
Inventive step (IS)	Yes:	Claims	
	No:	Claims	1-29
Industrial applicability (IA)	Yes:	Claims	1-29
	No:	Claims	

2. Citations and explanations  
**see separate sheet**

**VII. Certain defects in the international application**

The following defects in the form or contents of the international application have been noted:  
**see separate sheet**

**VIII. Certain observations on the international application**

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:  
**see separate sheet**

**A - CONCERNING ITEM VIII - CLARITY**

1. Claim 1 is not clear (Art. 6 PCT), as explained below:
  - a) It is not clear whether the word "thereto" (line 4) refers to the system or to the device.
  - b) It is not clear whether the feature "control information" mentioned in lines 6, 8, 11, 16 and 19 is the same feature as the "control information" defined on line 3.
  - c) The term "to transfer" (line 16) is confusing, as the control information is actually transferred by the controller, and only received by the system.
2. Claim 17 is not clear (Art. 6 PCT), as explained below:
  - a) It is not clear whether the expression "having a device" (page 16, line 18) refers to the controller or to the system.
  - b) It is not clear whether the feature "control information" mentioned on page 16 (lines 22, 24, 25 and 27 ) is the same feature as the "control information" defined on page 16 (line 19).
3. Claims 2, 3 and 4 repeat features already defined in claim 1 [the control means configures the device in dependence upon the transferred control information].

**B - CONCERNING ITEM V**

1. The following documents are cited:

D1: US 5 791 407

D2: WO 96/35152

D3: US 5 412 377

2. Independent claims 1 and 17 are not clear, as explained in section B (above). In order to provide a basis for the examination of inventive activity, the Examiner has therefore used the drawings and description of the application to provide the following interpretation of these claims (amendments are underlined):

3. Examiner's Interpretation of Independent Claim 1:

"An arrangement for configuring a device (102) of a system (101) by transferring control information from a controller (2) to the system (101), wherein the controller (2) comprises:

input means for receiving said control information for configuring the device (102);

memory circuitry (6) arranged to store and retrieve said control information for configuring the device (102); and

output means for transferring to the system (101) said retrieved control information for the device (102); and

wherein the system (101) comprises:

means (104) for coupling with the output means of the controller (2) to enable the transfer of the retrieved control information to the system (101); and

control means (114) arranged to configure the device (102) in dependence upon the transferred control information."

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

---

International application No. PCT/IB99/02082

4. Examiner's Interpretation of Independent Claim 17:

"A controller (2) for storing control information for a system (101) ~~[deletion]~~ and for configuring a device (102) of the system (101) by transferring control information to the system (101), the controller (2) comprising:

input means for receiving the control information for configuring the device (102);

memory circuitry (6) arranged to store and retrieve the control information for configuring the device (102) ~~[deletion]~~; and

output means for transferring to the system (101) the retrieved control information ~~[deletion]~~ for configuring the device (102)."

5. As well as addressing the objections raised in section A (above), the Examiner's interpreted wording of claims 1 and 17 also addresses a number of further, more minor inconsistencies and unclarities. Please note that the following comments concerning inventive activity relate to the wording of the "Examiner's Interpretation" of independent claims 1 and 17 [see points B(3) and B(4) above].
6. Claim 1 defines no more than a normal prior art system (see, for example figure 1 of the present application) in which a remote programming device is used to configure a device of the said system.
7. The use of such a remote programming device in such a context is, however, known in the art [see D1, D2 and D3]. It is therefore considered that independent claims 1 and 17 fail to meet the requirements of Art. 33(3) PCT.
8. Dependent claims 2-16 and 18-29 do not appear to introduce subject-matter which could form the basis of an inventive independent claim, because they define features which either constitute part of the common general knowledge or which are derivable in an obvious way from the prior art.



9. All the claims of this application are considered to meet the requirements of Article 33(2) PCT [Novelty] and of Article 33(4) PCT [Industrial Applicability].

### **C - CONCERNING ITEM VII**

1. This report concludes the international procedure. Therefore the observations made therein are intended to assist the Applicants if they should decide to subsequently enter into the national/regional phase. Therefore it is not appropriate to make a response concerning these observations to the International Preliminary Examining Authority.
2. Should the Applicants decide to enter into the national/regional phase, in particular before the European Patent Office, the following matters would have to be addressed:
  - a) Amendments would have to be carried out to fully address all the objections raised under points A and B above.
  - b) One possible way forward would be to use the wording of the "examiner's interpretation" of claims 1 and 17 [see points B(3) and B(4) above] as a basis for further amendment. It should however be noted that such further amendment would be essential in order to provide claims 1 and 17 with a non-obvious inventive step.
  - c) Should the applicants wish to adopt the "interpreted" versions of claims 1 and 17 [see points B(3) and B(4) above] as a basis for further amendment, they would have to verify wording does not introduce added subject-matter.

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

---

International application No. PCT/IB99/02082

- d) D1, D2 and D3 would have to be identified in the description and the relevant material disclosed therein would have to be briefly discussed
- e) Reference signs in parentheses would have to be inserted in the claims [see points B(3) and B(4) above]
- f) The description, particularly the summary of invention in the introductory portion, would have to be amended in order to bring it into conformity with the new independent claims.
- g) The remaining dependent claims would have to be adapted to the new independent claim. In particular, it would have to be ensured that terminology used in the dependent claims is fully consistent with the terminology used in the new independent claims.
- h) Claim 29 appears to introduce subject-matter not disclosed in the original application, in contravention of Art. 19(2) PCT. The Applicant would therefore have to delete this claim, or explain how, starting from the disclosure of the application as originally filed, the feature of this claim may be implicitly derived.

A Portable Controller

5 The present invention relates to the configuration of systems, such as vehicle management systems. In particular, the invention relates to a portable controller for configuring a system comprising one or more devices.

Electronically controlled devices are very common, and are becoming even more so.

10

Currently, the onus lies with the user of both electronically and manually controlled devices to adapt each device as he uses it. For example, when a driver gets into a vehicle, he generally adjusts at least the mirror and seat positions, and often also temperature/ventilation settings.

15

It would be desirable to reduce the burden placed on a user to adapt each device within a system when he employs that system. It would be desirable to adjust the devices of a system automatically when a user wishes to use that system, according to the user's predetermined preferences.

20

According to one aspect of the present invention, there is provided an arrangement for configuring a device of a system by transferring control information from a controller thereto, wherein the controller comprises: input means for receiving control information for configuring the device ; memory circuitry arranged to store and retrieve control information for configuring the device; and output means for transferring to the system retrieved control information for the device; and wherein the system comprises: means for coupling with the output means of the controller to transfer retrieved control information to the system; and control.

30

## Claims

1. An arrangement for configuring a device of a system by transferring control information from a controller thereto, wherein the controller comprises:

5

input means for receiving control information for configuring the device ;

memory circuitry arranged to store and retrieve control information for configuring the device; and

10

output means for transferring to the system retrieved control information for the device; and

wherein the system comprises:

15

means for coupling with the output means of the controller to transfer retrieved control information to the system; and

control means arranged to configure the device in dependence upon the transferred control information.

20

2. An arrangement as claimed in claim 1, wherein the system comprises a plurality of devices and the control means is arranged to configure the devices in dependence upon transferred control information.

25

3. An arrangement as claimed in claim 2, wherein the controller output means transfers to the system retrieved control information for the devices of the system, and the control means configures the devices in dependence upon the transferred control information.

30

4. An arrangement as claimed in claim 2, wherein the controller output means transfers to the system retrieved control information for a selection of

devices of the system defined by the user, and the control means configures the selection of devices in dependence upon the transferred control information.

- 5     5.     An arrangement as claimed in any preceding claim, wherein the memory circuitry stores and retrieves control information corresponding to the user's personal preferences.
- 10     6.     An arrangement as claimed in any of claims 1 to 4, wherein the memory circuitry stores and retrieves information identifying a particular system and the control information only configures the device or devices of that particular system.
- 15     7.     An arrangement as claimed in claim 6, wherein the device or devices are security devices.
8.     An arrangement as claimed in any preceding claim, wherein the system is a vehicle control system.
- 20     9.     An arrangement as claimed in claim 8, wherein the device or devices are selected from devices including an alarm, an immobiliser, a seat positioner, a mirror positioner, door/boot locks, temperature/ventilation controller, an engine management device, and servicing interface device.
- 25     10.    An arrangement as claimed in any preceding claim, wherein the controller is removable from the environment of the system.
- 30     11.    An arrangement as claimed in claim 10, wherein the controller transfers retrieved control information to the system when it enters the environment of the system.

12. An arrangement as claimed in any preceding claim, wherein the controller is a handportable radio device.

13. An arrangement as claimed in any preceding claim wherein the means  
5 for coupling comprises an electrical connector or an IR or radio transceiver.

14. An arrangement as claimed in any preceding claim wherein the device is electronically controlled by the system.

10 15. An arrangement as claimed in any preceding claim wherein the system comprises a processor and memory, wherein the memory stores the transferred control information and the processor controls the operation of the device, reconfiguring it in dependence upon the received control information.

15 16. An arrangement as claimed in any preceding claim wherein the controller is as claimed in any one of claims 17 to 28.

17. A controller for storing control information for a system having a device and for configuring the device of the system by transferring control information  
20 to the system, comprising:

input means for receiving control information for configuring the device ;

memory circuitry arranged to store control information for configuring the  
25 device and to retrieve control information associated with the device; and

output means for transferring to the system, retrieved control information associated with the device.

18. A controller as claimed in claim 17, wherein memory circuitry is arranged to store control information for configuring a plurality of devices of the system.

5 19. A controller as claimed in claim 18, wherein the output means is arranged to transfer to the system retrieved control information for the devices of the system.

10 20. A controller as claimed in claim 18, wherein the output means transfers to the system retrieved control information for a selection of devices of the system defined by the user.

15 21. A controller as claimed in any of claims 17 to 20, wherein the memory circuitry stores and retrieves control information corresponding to the user's personal preferences.

20 22. A controller as claimed in any of claims 17 to 21, wherein the memory circuitry stores and retrieves information identifying a particular system and only outputs control information corresponding to the device or devices of that particular system.

25 23. A controller as claimed in claim 22, wherein the memory circuitry comprises a look-up table for associating the identity of the system and its devices with the respective device control information.

24. A controller as claimed in claim 23 wherein the look-up table is arranged to assign portions of memory to each identity

30 25. A controller as claimed in any of claims 17 to 24, wherein said output means comprises means for establishing a bi-directional link with the system and for performing a handshaking procedure with the system,

26. A controller as claimed in claim 25, wherein said bi-directional link transfers the identity of a system/device to the controller and transfers control information from the controller to the system.

5 27. A controller as claimed any of claims 17 to 26, wherein said output means comprises an electrical interface or IR interface or radio interface

28. A controller as claimed in any of claims 17 to 27, wherein the power to  
10 operate said controller is provided by the system to which control information is transferred.

29. An arrangement as claimed in claim 1, wherein configuring the device changes the manner in which the device function.



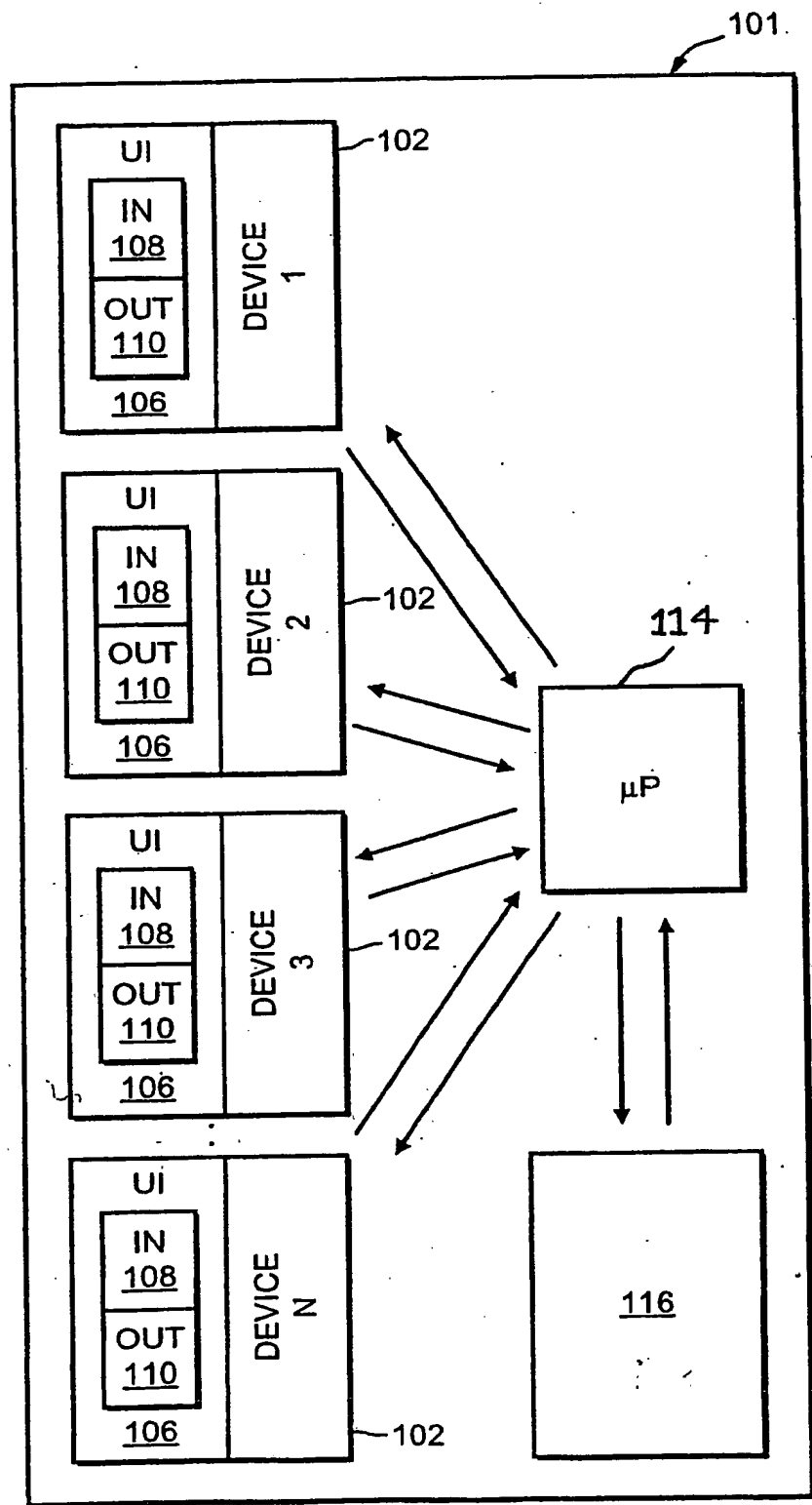


FIG. 1

FIG. 2

